-continued

oligonucleotide

<400> SEQUENCE: 1

taatacgact cactataggg 20

What is claimed is:

1. A microneedle device for administering a polypeptide, comprising:

(a) a dehydrated composition comprising the polypeptide; and

(b) a substrate comprising a sheet and a plurality of microneedles extending therefrom, each microneedle of the plurality of microneedles comprising a tip, a base, a hinge at the base connecting the microneedle to the sheet, and a well comprising the dehydrated composition.

2. The microneedle device of claim 1, wherein the polypeptide is an antigen associated with an infectious agent.

3. The microneedle device of claim 1, wherein the polypeptide is present in an amount effective to induce an immune response to the polypeptide in an individual in need thereof.

4. The microneedle device of claim 1, wherein the polypeptide comprises a sequence from an influenza virus hemagglutinin (HA) or neuraminidase (NA) polypeptide.

5. The microneedle device of claim 4, wherein the polypeptide comprises a sequence from an influenza A virus HA polypeptide or an influenza B virus HA polypeptide.

6. The microneedle device of claim 5, wherein the polypeptide comprises a sequence from an HA polypeptide from a viral strain of a group 1 influenza A virus subtype selected from the group consisting of H1, H2, H5, H6, H8, H9, H11, H12, H13, H16, H17, and H18.

7. The microneedle device of claim 5, wherein the polypeptide comprises a sequence from an HA polypeptide from a viral strain of a group 2 influenza A virus subtype selected from the group consisting of H3, H4, H7, H10, H14, and H15.

8. The microneedle device of claim 5, wherein the polypeptide comprises a sequence from an HA polypeptide from a viral strain of an influenza B virus Yamagata or Victoria lineage.

9. The microneedle device of claim 1, wherein the composition comprises a polypeptide selected from the group consisting of:

(a) a polypeptide comprising a sequence from an hemagglutinin (HA) polypeptide from a viral strain of an influenza A virus H1 subtype;

(b) a polypeptide comprising a sequence from an HA polypeptide from a viral strain of an influenza A virus H3 subtype;

(c) a polypeptide comprising a sequence from an HA polypeptide from a viral strain of an influenza B virus Yamagata lineage; and

(d) a polypeptide comprising a sequence from an HA polypeptide from a viral strain of an influenza B virus Victoria lineage.

10. The microneedle device of claim 1, wherein the composition comprises at least two polypeptides selected from the group consisting of:

(a) a polypeptide comprising a sequence from an hemagglutinin (HA) polypeptide from a viral strain of an influenza A virus H1 subtype;

(b) a polypeptide comprising a sequence from an HA polypeptide from a viral strain of an influenza A virus H3 subtype;

(c) a polypeptide comprising a sequence from an HA polypeptide from a viral strain of an influenza B virus Yamagata lineage; and

(d) a polypeptide comprising a sequence from an HA polypeptide from a viral strain of an influenza B virus Victoria lineage.

11. The microneedle device of claim 1, wherein the composition comprises:

(a) a polypeptide comprising a sequence from an hemagglutinin (HA) polypeptide from a viral strain of an influenza A virus H1 subtype;

(b) a polypeptide comprising a sequence from an HA polypeptide from a viral strain of an influenza A virus H3 subtype; and

(c) a polypeptide comprising a sequence from an (i) an HA polypeptide from a viral strain of an influenza B virus Yamagata lineage; or (ii) an HA polypeptide from a viral strain of an influenza B virus Victoria lineage.

12. The microneedle device of claim 1, wherein the composition comprises:

(a) a polypeptide comprising a sequence from an hemagglutinin (HA) polypeptide from a viral strain of an influenza A virus H1 subtype;

(b) a polypeptide comprising a sequence from an HA polypeptide from a viral strain of an influenza A virus H3 subtype;

(c) a polypeptide comprising a sequence from an HA polypeptide from a viral strain of an influenza B virus Yamagata lineage; and

(d) a polypeptide comprising a sequence from an HA polypeptide from a viral strain of an influenza B virus Victoria lineage.

13. The microneedle device of claim 1, wherein the polypeptide comprises an antigen from a pathogen selected from the group consisting of *Mycobacterium tuberculosis*, a Hepatitis B virus, a poliovirus, *Cornynebacterium diphtheriae, Clostridium tetani, Bordetella pertussis, Haemophilus influenza, Streptococcus pneumoniae*, a Rotavirus, a Morbillivirus, a rubella virus, a human papillomavirus, a Japanese encephalitis virus, a yellow fever virus, a Tick-borne encephalitis virus, *Salmonella typhi, Vibrio cholerae, Neisseria meningitides*, a Hepatitis A virus, a Lyssavirus, a Dengue virus, a Rubulavirus, and a Varicella-zoster virus.

14. The microneedle device of claim 1, wherein the composition further comprises a pharmaceutically acceptable excipient.

15. The microneedle device of claim 1, wherein the composition further comprises an adjuvant.

16. The microneedle device of claim 1, wherein the tip is bent about 90 degrees from the sheet about the hinge.

17. The microneedle device of claim 1, wherein the dehydrated composition is loaded onto the well of each microneedle by a microfluidic dispensing device.

18. The microneedle device of claim 1, wherein each well comprises a coating comprising the dehydrated composition.